



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

M

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|--------------------|
| 09/857,960 | 06/12/2001 | Johann Engelhardt | LASP:111-US- | 2526 |
| 24041 | 7590 | 03/16/2004 | EXAMINER | |
| SIMPSON & SIMPSON, PLLC 5555 MAIN STREET WILLIAMSVILLE, NY 14221-5406 | | | | STOCK JR, GORDON J |
| ART UNIT | | PAPER NUMBER | | |
| | | 2877 | | |

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/857,960 | ENGELHARDT, JOHANN | |
| | Examiner | Art Unit | |
| | Gordon J Stock | 2877 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 December 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 32-48 and 54-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 32-48 and 54-56 is/are rejected.
- 7) Claim(s) 57 and 58 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 32-45, 47-48, 54-56** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schultz et al. (6,180,415)** in view of **Yguerabide et al. (6,214,560)** further in view of **Bacus (5,018,209)** and **Peters (5,592,571)**.

As for **claim 32**, Schultz in a plasmon resonant method discloses: assigning particles with specific diameters and specific characteristics and detecting said structures by detecting said particles specifically bound in or on said structures using light that acts on said particles (cols. 3; lines 1-35; col. 4, lines 1-30; col. 5, lines 45-65; col. 8, lines 1-30; col. 9, lines 25-45). As for constant characteristics independent of time, Schultz discloses many constant characteristics of the particle that are solely dependent upon wavelength of light (col. 9, lines 45-65). As for recording an image of said detected particles and at least one microscopic image of said structures using the microscope, Schultz discloses spectral images (Figs. 1 and 2; col. 15, lines 40-60) and suggests that photographs or visual images may be recorded (col. 17, lines 55-60). And evaluates recorded images using digital image processing (col. 17, lines 25-65; col. 18, lines 1-55); And suggests that electron microscopic images be taken with the spectral data (col. 22, lines 45-65). In addition, Yguerabide in an analyte assay using particulate labels that have particular scattering characteristics and maybe gold and silver just as the Schultz particles

suggests that an image for counting and a separate image for scattering characteristics be recorded for characterizing particle properties (col. 55, lines 15-40). Peters in a digital processing method teaches that digitally processed microscopic images have far more information enhancement for an analysis by human inspection is limited by the visual system used, the eye (col. 1, lines 50-67; col. 2, lines 1-25). And Bacus in a microscope system teaches using a digital processing system for having higher resolution images recovered (col. 7, lines 65-67; col. 8, lines 1-25). Therefore, it would be obvious to one skilled in the art to have the method record an image of the detected particles and at least one microscopic image and have them evaluated through digital image processing in order to have enhanced resolution of the visual microscopic image and to have at least two images one for spectral content and one for visual information such as for counting particles.

As for **claims 33, 35, 39-42**, Figs. 3 and 5 of Schultz suggest a conventional polarization transmission or a conventional polarization reflection microscope may be used. They disclose everything as above (see **claim 32**). As for Mie scattering being the basis of particle detection and that the selected wavelength being a function of said diameter and characteristics, Schultz is silent. However, Yguerabide teaches the following: that a wavelength depends on the size and characteristics of the particles and that the particles will be detected through Mie scattering and that the wavelength of said light is larger than or approximate to size of particles; particles are detected through transmission mode; through a polarization transmission microscope; through reflection microscope; through polarization reflection microscope (col. 9, lines 50-67; cols. 10-13; cols. 19-24). Therefore, it would be obvious to one skilled in the art to have the particles detected based on Mie scattering for scattering particles' sizes and characteristics are dependent

Art Unit: 2877

on wavelength. And it would be obvious to one skilled in the art to have the wavelengths selected at a function of said diameter and characteristics of particles in question in order to detect particular Mie signals dependent upon the size and characteristics of a particle at a particular wavelength.

As for **claim 34**, Schultz discloses everything as above (see **claim 32**). However, he is silent concerning selecting a wavelength of suitable light as a function of said of diameter and characteristics of particles. However, he does teach the plasmon signal occurring on said particles (col. 9, lines 18-45). However, he does state that the wavelengths are dependent on size and characteristics of particles (col. 9, lines 46-60). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the wavelength of light be set as a function of said diameter and said specific characteristics in order to detect the specific plasmon signals of the particle under detection.

As for **claim 36**, Schultz discloses areas of preparation to be differentiated are provided with particles of various diameters, so that said areas to be differentiated are detected simultaneously or successively by means of suitable light of various wavelengths (col. 19, lines 25-55).

As for **claims 37-38**, Schultz states that the particles are metallic and maybe ellipsoidal (col. 10, lines 11-25; col. 9, lines 65-67).

As for **claims 43-45, 47-48** said light is produced using a high pressure lamp; means for wavelength selection and polarization; laser as light source; means for selecting wavelengths connected in series or integrable filters (Schultz: col. 3, lines 1-20; col. 13, lines 40-50; col. 25-40; col. 17, lines 1-25).

As for **claim 54**, said particles are coated on a surface (Schultz: col. 14, lines 49-65).

As for **claims 55 and 56**, they disclose everything as above (see **claim 32**). As for the microscopic image it can be a reflected light microscopic image depending on how the light hits the sample (Schultz: Fig. 3) or transmitted light microscopic image (Schultz: Fig. 5). In addition, Yguerabide discloses transmissive or reflective modes for analyzing scattering particles (col. 59, lines 60-65; col. 64, lines 10-55).

3. **Claim 46** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Schultz et al. (6,180,415)** in view of **Yguerabide et al. (6,214,560)** further in view of **Bacus (5,018,209)** and **Peters (5,592,571)** further in view of **Kaiser (4,169,676)**.

As to **claim 46** they disclose everything as above (see claim 32). In addition, Yguerabide discloses measuring all scattering signals such as from Mie-signals (col. 22, lines 1-30). He is silent concerning a parametric oscillator. However, Kaiser in a method for determining contents of metabolic products in blood teaches that parametric oscillators may be used in place of adjustable lasers (col. 3, lines 1-6). Therefore, it would be obvious to one skilled in the art to have a parametric oscillator replace an adjustable laser, for they are art-recognized equivalents in wavelength adjustable light sources.

Allowable Subject Matter

4. **Claims 57 and 58** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 57**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for differentiated examination of various structures in a biological

Art Unit: 2877

preparation recording a conventional transmitted light microscopic image and a conventional reflected light microscopic image, in combination with the rest of the limitations of **claim 57**.

As to **claim 58**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for differentiated examination of various structures in a biological preparation recording a plurality of conventional transmitted light microscope images and conventional reflected light microscope images, in combination with the rest of the limitations of **claim 58**.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 8:00 a.m. - 4:30 p.m.

Art Unit: 2877

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

RS

gs

March 7, 2004


Zandra V. Smith
Primary Examiner
Art Unit 2877